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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BERHANU, SAMUEL

ART UNIT PAPER NUMBER

2838

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,541

Applicant(s)

RICHTER ET AL.

Examiner

Samuel Berhanu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/1/2004, 11/12/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-8 and 10 are rejected under 35 U.S.C. 101 non- Statutory

because: -

Claims 1-8 recite a method for determining the charge drawn by an energy storage battery. Since the "step of determining", merely requires a person to think through the process without necessarily providing or using the result in a manner sufficiently related to the disclosed practical application so as to have any real-world value, the claims do not provide a useful concrete, and tangible result.

Regarding Claim 10, it is non- Statutory because it recites a computer program which is not a stored on a medium so as to realize its functionality.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Mentgen et al. (US 2002/0101243).

Regarding Claim 1, Mentgen et al. disclose in Figure 1, a method for determining the charge drawn by an energy storage battery starting from an initial state of charge at the start of the drawing of the charge (Paragraph 9, charging or discharging), the method comprising: determining the charge drawn as a function of an exponential function (Page 1, lines 1-25) with a time constant, wherein the time constant is defined at least as a function of the energy storage battery type and of the temperature of at least one of the battery temperature and the electrolyte temperature (Paragraph 18).

Regarding Claim 2, Mentgen et al. disclose the time constant is also defined as a function of the state of charge at the start of the drawing of the charge (Paragraph 18).

Regarding Claim 3, Mentgen et al. disclose the time constant is also defined as a function of at least one of a charging voltage, a mean charging voltage and a rated charging voltage (Page 1, Paragraph 9)

Regarding Claim 4, Mentgen et al. disclose in Equation 1 and 2 in page 1 paragraphs 6-9, the absolute amount of charge drawn according to the function

$$\Delta Q \approx (1 - e^{-t/\tau}) (Q_o - Q_s),$$

where ΔQ is the absolute amount of charge drawn, Q_o is the defined rated capacity of the energy storage battery, and Q_s is the initial charge of the energy storage battery at the start of the drawing of the charge. (Page 1, paragraph 6-7)

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Regarding Claim 5, Mentgen et al. disclose in Equation 1 and 2 in page 1 determining the relative state of charge of the energy storage battery with respect to the rated capacity of the energy storage battery according to the function:

$$Q_t(t)/Q_o \approx 1 - (1 - Q_s/Q_o)^{-1/\tau}$$

where $Q(t)/Q_o$ is the relative state of charge of the energy storage battery, Q_o is the rated capacity of the energy storage battery, and Q_s is the initial charge of the energy storage battery at the start of the drawing of the charge (Page 1, paragraph 6-7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mentgen et al. (US 2002/0101243) in view of Okda et al. (US 5,949,217).

Regarding Claim 9, Mentgen et al. disclose in Figures 1 and 2, a monitoring device for energy storage batteries comprising: a computation device (22) for determining the charge drawn by an energy storage battery starting from an initial state of charge at the start of the drawing of the charge (Page 2, Paragraph 0022); wherein the computation device is desired to carry out a method comprising: a method comprising determining the charge drawn by an energy storage battery starting from an initial state of charge at the start of the drawing

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of the charge (Paragraph 9, charging or discharging), the method comprising: determining the charge drawn as a function of an exponential function (Page 1, lines 1-25) with a time constant, wherein the time constant is defined at least as a function of the energy storage battery type and of the temperature of at least one of the battery temperature and the electrolyte temperature (Paragraph 18). However, Mentgen et al. do not disclose a device for measuring battery temperature.

Okda et al. disclose in Figure 1, a device for measuring battery temperature (Column 3, lines 5-9). It would have been obvious at the time of the invention to a person having ordinary skill in the art to add a temperature measuring means in Mentgen et al. device in order to avoid battery overheating.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentgen et al. (US 2002/0101243) in view of Hirzel (5,381,096).

Regarding Claim 10, Mentgen et al. disclose in Figure 1, determining the charge drawn by an energy storage battery starting from an initial state of charge at the start of the drawing of the charge (Paragraph 9, charging or discharging), the method comprising: determining the charge drawn as a function of an exponential function (Page 1, lines 1-25) with a time constant, wherein the time constant is defined at least as a function of the energy storage battery type and of the temperature of at least one of the battery temperature and the electrolyte temperature (Page 2, Paragraph 18). However, Mentgen et al. do not disclose a computer program code designed to carry out a method when the computer program is run using a processor device.

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Hirzel discloses in Figure 8, a computer program code designed to carry out a method when the computer program is run using a processor device (Column 3, lines 46-49, Column 10, lines 31- 41). It would have been obvious at the time of the invention to a person having ordinary skill in the art to modify Mentgen et al. device and use a computer program in order to accurately calculates the state of charge of the battery.

Regarding Claim 11, Hirzel discloses in Figure 10, the computer program is a program file stored on a data storage medium (74) (Column 10, lines 31-41).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB

A handwritten signature in black ink, appearing to read "MS 9/18/05".

MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800